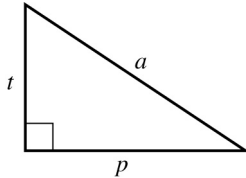


Test Yourself Chapter 13 Right-angled triangles and trigonometry

Name: _____

All Multiple Choice

1

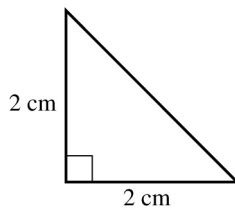


B

In the diagram above, which of the following statements is incorrect?

- A $a^2 - p^2 = t^2$
- B $p^2 - t^2 = a^2$
- C $a^2 = p^2 + t^2$
- D $p^2 = a^2 - t^2$

2



D

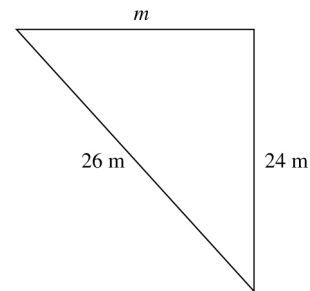
The length of the hypotenuse in the above triangle is:

- A 4 cm
- B $\sqrt{4}$ cm
- C 8 cm
- D $\sqrt{8}$ cm

3

The value of m in the triangle drawn below is:

C



- A 2 metres
- B 6 metres
- C 10 metres
- D 12 metres

4

A 20-metre ladder is placed 4 m from the foot of a wall. How high up the wall will the ladder reach?

B

- A 16 m
- B 19.6 m
- C 20.4 m
- D 24 m

5

The value of $\frac{8}{\sin 32^\circ 34'}$ is closest to:

C

- A 4.3
- B 14.8
- C 14.9
- D 15.0

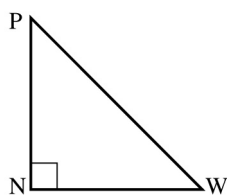
6

Given that $\tan \theta = 0.8693$ the angle θ is closest to:

A

- A 41°
- B $41^\circ 1'$
- C $41^\circ 2'$
- D 42°

- 7 For the diagram below, which of the following statements is correct? C

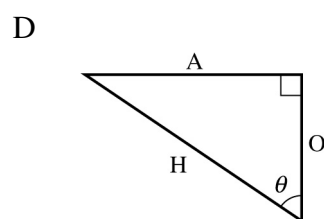
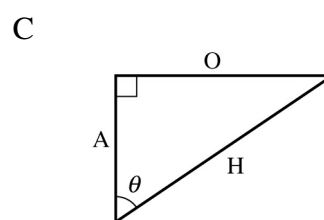
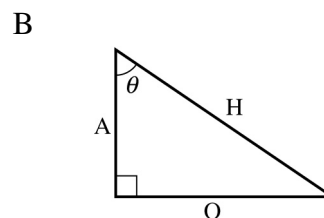
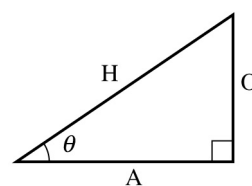


- A $\tan N = \frac{NW}{PN}$
 B $\cos P = \frac{NW}{PW}$
 C $\sin W = \frac{PN}{PW}$
 D $\tan P = \frac{PN}{NW}$

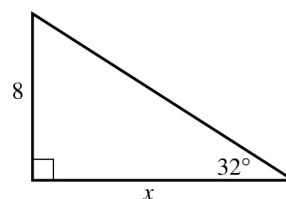
- 8 Angle P has a tangent of 0.4, the size of angle P is closest to: A

- A $21^\circ 48'$
 B $21^\circ 8'$
 C $66^\circ 42'$
 D $66^\circ 25'$

- 9 Which of these triangles is incorrectly labelled? D

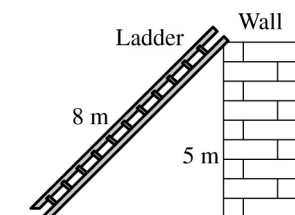


- 10 Which of these statements can be used to find the value of x ? D



- A $x = 8 \times \cos 32^\circ$
 B $x = \frac{8}{\cos 32^\circ}$
 C $x = 8 \times \tan 32^\circ$
 D $x = \frac{8}{\tan 32^\circ}$

- 11** An 8-m-long ladder leans against a 5 m high wall. Which of the following can be used to work out the angle the ladder makes with the wall? **B**

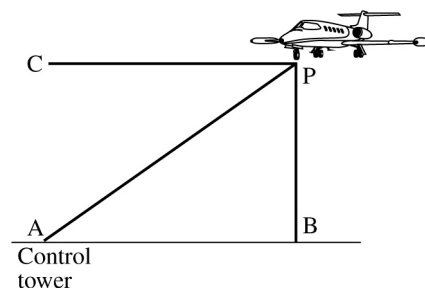


- A $\sin \theta = \frac{5}{8}$
 B $\cos \theta = \frac{5}{8}$
 C $\sin \theta = \frac{8}{5}$
 D $\cos \theta = \frac{8}{5}$

- 12** The value of $\frac{27}{\tan 43^\circ 15' 20''}$ is closest **A**
 to:
 A 28.7
 B 28.8
 C 37.1
 D 39.4

- 13** Triangle DEF is right-angled at angle D. **B**
 If DE measures 10 cm and DF measures 12 cm, the size of angle FED is closest to:
 A 56°
 B 50°
 C 34°
 D 40°

- 14** The following diagram represents the view from the control tower to an aeroplane approaching the runway. **D**

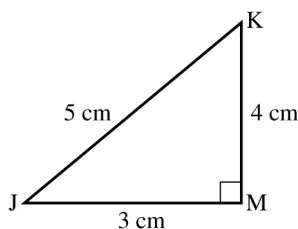


Which of the following statements is incorrect?

- A The angle of elevation from the control tower to the plane is represented by angle PAB.
 B The altitude of the plane is represented by the length of PB.
 C The horizontal distance of the plane from the airport is represented by the length of AB.
 D Angle APB represents the angle of depression from the plane to the control tower.

- 15** If the plane in question 14 is a horizontal distance of 20 km from the control tower, at an angle of elevation of 25° its altitude is approximately: **B**
 A 8 km
 B 9 km
 C 18 km
 D 22 km

16



D

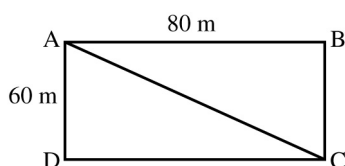
In the triangle above, angle KJM could be calculated directly by:

- A $\cos^{-1}\left(\frac{4}{5}\right)$
- B $\sin^{-1}\left(\frac{5}{3}\right)$
- C $\cos^{-1}\left(\frac{5}{3}\right)$
- D $\sin^{-1}\left(\frac{4}{5}\right)$

- 17 A kite on a 50-m string is flying at an angle of 20° to the vertical. The vertical height of the kite could be calculated by:

- A $\frac{50}{\cos 20^\circ}$
- B $\frac{50}{\sin 20^\circ}$
- C $50 \sin 20^\circ$
- D $50 \cos 20^\circ$

18

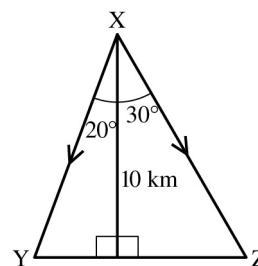


B

A rectangular paddock is 80 m by 60 m. How much shorter would it be to walk directly from A to C than it would be to walk from A to C via B?

- A 20 m
- B 40 m
- C 60 m
- D 100 m

19



B

Two bushwalkers start from point X, Tom walking in the direction XY and Michael in the direction XZ.

How far has Michael walked when he reaches point Z?

- A 10.6 km
- B 11.5 km
- C 17.3 km
- D 29.2 km

- 20 When our bushwalkers in question 19 stop walking, Tom at point Y and Michael at point Z, how far apart are they?

- A 3.6 km
- B 5.8 km
- C 9.4 km
- D 11.9 km